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ABSTRACT

Brazil's education of its emerging middle class is compared in this paper with the U.S. community colleges' education of their middle and lower class constituency. First, introductory comments argue that, just as there are stratified technological levels within the labor market, levels of knowledge can also be distinguished, pointing to access to "high status knowledge" as a critical problem in determining the equity of a nation's educational system. After presenting a rationale for comparing the two educational systems, the paper defines "middle class" for the purposes of the analysis, examines Brazil's two-tiered educational system of public and private schooling, and describes SENAI, a private educational enterprise offering industry-oriented vocational training to a select group of working class students. Next, the U.S. community colleges are described and assessed in terms of how well they serve the educational needs of the middle and lower middle classes. Educational innovations that have been implemented in Brazil with limited success are reviewed next, including efforts to offer a 2-year postsecondary curriculum and to expand university access through night classes. The final sections discuss implications and offer conclusions, indicating that both SENAI and the community college offer unique education to the lower middle levels of their respective societies, yet neither effectively offers education for those at the very bottom of the social structure. (EJV)

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EDUCATING THE EMERGING MIDDLE CLASS IN BRAZIL: A Comparative Analysis of SENAI and the American Community College

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Introduction

Even the most developed of the Third World countries have economies interdependent with the policies of the major industrialized nations. Those nations most dependent on the major powers have developed what Irizarry (1980) terms "disarticulated" economies that serve, initially, the interests and needs of the industrialized nations. This form of economic development is responsible for an economy often based on administrative functions to serve foreign trade rather than internal industrialization.

The economic dependence on serving the needs of industrialized nations creates an educational system aimed at supplying this infrastructure with civil servants (Irizarry, 1980). In such countries, because the "upper and middle levels of the occupational structure are peaked and constricted in relation to the massive base," the limited opportunities available stress educational credentials as the means for access (Foster, 1977, p. 227). The government becomes a major employer and competition within this highly bureaucratic system leads to demands for more credentials by upwardly mobile individuals and an escalation of the demands for formal education.

As world economies increasingly embrace high technology, the future education of the individuals who produce, develop, and use this technology is of critical importance to a country. In order to remain competitive in world markets individual nations must have a work force capable of using the most advanced technologies. Although leadership in the world technological market is of foremost concern to countries such as the United States and Japan, the focus of developing countries is upon maintaining a competitive position in world markets. Merely providing education for the sake of credentials does little to develop the technological capabilities of a country or its people.

Regardless of a country's level of development, there are stratified technological levels within the sectors of each country's labor market. Upper, middle, and lower levels of technological expertise exist in the development, manufacturing, and marketing of high technology. Likewise, a nation's educational system has responsibility for dispensing knowledge in its preparation of workers for the varied levels of technology. Levels of knowledge can also be distinguished, with access to "high status knowledge" (Apple, 1978) a critical problem in determining the equity of a nation's educational system. Whereas upper classes have more resources with which to gain access to higher education, members of the middle class may have the academic ability, yet lack resources to gain entry. Those of the lowest social classes may also have incipient academic ability but have not had the opportunity to foster this potential, the

resources to gain access to sources of high status knowledge, or the aspirations to do so.

The focus of this paper is upon the role of postsecondary education in providing mid-level technical education to the middle and working classes. How knowledge is dispensed to the lower and working classes and how a country educates its people for mid-level economic needs is discussed. Inherent in this discussion is the equity of the educational system and its contribution to social stratification.

Comparative Education

In addressing the education of the middle and working classes for mid-level technology, the context for this paper is Brazil. How its emerging middle classes are being educated to meet the demands of these individuals and of the Brazilian economy provides the focus for this paper. The intent here is not simply to review the state of educational development in Brazil, but rather to offer a critical comparison of the education of the middle class in Brazil with that of the United States. Specifically, since community colleges in the US serve, primarily, middle and lower class students, this paper compares Brazil's education of its emerging middle class with the US community colleges' education of their constituency.

A comparative analysis is adopted here to identify the uniqueness of each system. The adoption of a comparative focus or the use of "comparative education" has various benefits. Noah (1984) observes: "...we can truly comprehend ourselves only in the context of a secure knowledge of other societies." We are best able to understand the uniqueness of our education by looking at other systems.

A comparative approach also helps break down the parochialism of adopting a single focus or stance to one's assessment of an educational system. Because the US is a major world power, replete with concomitent educational resources, there is a tendency for Americans to compare the rest of the world's educational systems with theirs. Comparative education promotes an escape from such parochialism by demanding recognition of different educational realities. Comparative Education also serves as a vehicle for critical assessment. It enables an evaluation of the relative merits of one system within its unique cultural context with the merits of other systems.

Finally, Comparative Education offers a natural experiment in a method similar to a before-after analysis. Campbell and Stanley (1963) promote the benefits of before-after designs as a way of understanding the effect of a treatment on subjects. In a similar way, Comparative Education allows us to look at the state of educational development in an emerging nation and contrast this with that of a more developed nation. When two nations have

some basis for similarity (e.g., geography, ethnicity, history) the younger nation can be seen as the "before" with the more developed nation the "after." Through a comparative analysis the younger nation can learn from the historical lessons of the older nation, and, likewise, the older nation can learn from the innovations of the younger nation. Both nations need not be exactly comparable, but, as proposed here, the less developed nation (i.e., Brazil) can both learn from and teach the more developed nation (the US) through a comparative analysis.

The major questions to be considered in this comparative analysis of Brazil and the United States are: How is mid-level knowledge dispensed in Brazil and who has access to this knowledge? How is Brazil educating for its mid-level technical positions compared to US education? Is the distribution of knowledge in Brazil perpetuating social stratification in the "veiled class conflict" Karabel (1972) observes in US community colleges?

Access to Mid-level Technical Knowledge

In a discussion of the middle class an obvious place to begin is with a definition. In the United States the middle class has been amorphously defined as a "state of mind" and thought of as the key element responsible for the creation of the "cultural of professionalism" (Bledstein, 1976). Because the middle class in the US is so large it encompasses a great variety of individuals and skills. For purposes here, the focus is primarily on the lower middle class, those individuals who are not in the professions (i.e., medicine, law, education, engineering, etc.), but aspire to a higher place on the social ladder through income or prestige. Similarly, the middle class in Brazil is equally difficult to define. Many Brazilians in the professions consider themselves to be "middle class," yet these people are far above the remaining rungs on the economic ladder. In a developing nation, such as Brazil, the distance between the upper and upper middle classes and the massive lower base, according to Foster (1977), is quite great. For this reason it is difficult for scholars to agree upon the identity of a middle group and to describe these individuals. Questions as to the existence of a middle class and its emergence engender critical debate in the literature and among professionals in Brazil. Havighurst (1968) does explain, however, that both the upper middle and lower middle class have expanded since 1950 in Brazil due to economic development.

Certainly, the definition, size, and attributes of the middle class in Brazil are topics of research beyond the scope of this paper. The focus here is upon the lower middle class, composed of those individuals, primarily in the urban centers (Rio de Janeiro and Sao Paulo), who have limited access to postsecondary education and who are most likely to be employed in white collar positions or are independent entrepreneurs in small business. These individuals are semi-professional and not

members of the more elite professions, such as medicine, law, and engineering. Most of these individuals are unable to attend the elite college-preparatory high schools, which are a requisite for high passing marks on the nation-wide college entrance examination for entry into the prestigious, public universities (tuition free). While many upper-middle class youths may be employed in middle- and lower-middle class positions, this is often temporary employment while attending college and seeking entry to the professions (Castro, 1979).

A distinguishing feature between the members of the upper-middle class and the lower middle is advanced education and professional employment of the upper middle class. One of the differences between the upper middle and the upper class gentry is the need for salaried employment by the upper-middle class. The upper middle group is hurt economically by inflation and devaluation of their credentials by the oversupply of professionals (e.g., engineers and doctors) in the urban centers.

Brazilian Education for Mid-level Technology

Brazil has a distinct two-tiered educational system consisting of private and public schooling. At the elementary level public schools afford limited access at the entry level with only 1 out of 10 who enroll in the first grade ever completing 8 years of school (Castro, 1979). There is a noticeable "lack of universal secondary schooling" in Brazil (Barnard, 1981) with limited access to postsecondary education through the public school system. The private system of education, however, moves the more affluent through elementary school into college preparatory or technical secondary schools and then into public or private universities. In the private system, differences in academic ability channel students into more academic or professional programs with the less able students directed into the liberal arts curriculum (Castro, 1986a). While the private system offers a well structured educational hierarchy, the public system has great gaps in the middle of its structure, supported by a weak base.

A solution, albeit a "narrow one" (Castro, 1986a), to the gap in the middle of Brazil's public educational structure for the lower-middle and working classes is a private educational enterprise called SENAI. Since so few students ever advance in the public schools, SENAI is unique because it provides technical education to a select group of working-class youths. SENAI assists industry in meeting its training needs while the educational and employment needs of its students are also being met. The major objective of SENAI is:

> "to find new and better ways to provide a sound general education on which the specific education related to a trade must be built...[and] to develop the individual potential of its students and to help those enrolled in its Vocational Training Centers to fill a useful role in society." (Andrade et al, 1984)

SENAI was formed in 1942 and although a private organization it is supported through a 1% payroll tax of industry. SENAI has six national training institutes and a network of vocational training centers. A similar national service, SENAC (Service for Commerce), was formed in 1946 to focus on apprenticeship in commerce. Since 1976 all vocational agencies have been under the guidance of the National Vocational Training System.

SENAI trains approximately 40% of all students in vocational programs while the public schools account for 50%, with the remainder educated at other private vocational schools (Horowitz, 1981). Students are allowed to enter SENAI only upon completion of at least four years of education. Unfortunately, "[o]nly about 20 per cent of those who enter primary school ever reach this level, and only about half of these are capable of meeting the other entrance requirements" (Castro, 1979, p. 624). Because so few students ever attain enough schooling to enter SENAI, Castro has termed SENAI a school for "blue collar elites." Its students are drawn from the most able working class youths whose fathers are predominantly foremen and skilled manual workers (Castro, 1979).

SENAI's curriculum is devoted to the specific training needs of industry and it appears to excel in teaching the appropriate technical skills needed on the job. Additionally, Castro (1979, p. 627) explains that "SENAI emphasizes values, attitudes, and aspirations more consistent with the jobs the trainees are likely to fill" than the traditional academic system. Because of its quality of instruction and close associations with industry, Castro (p. 625) believes SENAI "offers the most eloquent example of the possibilities for intelligent adaptation of education to the true potential of working-class children." Whereas innovative education is often limited to private schools in Brazil, SENAI offers some of the only modern, innovative instruction available to the working class.

While SENAI deals effectively (and narrowly) with a unique strata of society, the Brazilian educational system does not offer training for the bottom layer of society. As discussed in the next section of this paper, the American community colleges also provide a similarly "native and idiosyncratic solution" (Castro, 1986b) for a lower strata of society. Yet, in both countries there is a critical gap at the bottom of the educational structure.

Community Colleges in the United States

Whereas Brazil has a more unified focus for technical education at the federal level, the United States, with its decentralized educational structure, does not have such a system. The federal and state governments of the US do, however, provide money for technical vocational education, which is dispensed through secondary schools, vocational technical education centers, and community colleges. These educational institutions,

which are generally open to all students, tend to serve primarily middle and lower-middle class students, while not serving as well the lowest social classes of American society.

In the US the community college is the postsecondary institution devoted to serving the educational needs of the middle and lower-middle classes. Although most community colleges pride themselves on being "open" to all students, competition for high and middle-level technological education restricts enrollment to those students who can be most competitive academically. Students with poorer educational skills are unable to qualify for higher level technological programs.

How well the educational needs of the middle and lower middle classes are being served in the US is a continuing topic of debate. For example, community colleges have been criticized for channeling "working class students away from four-year colleges into middle-level technical occupations" (Karabel, 1972, p. 539). Grubb (1984, p. 441) warns further that by embracing, what he terms the high-tech "bandwagon," ... "post-secondary high tech programs may follow the high school patterns of 'training for unemployment.'" A continuing concern for community college programs is whether they are allowing education for high-tech occupations to expand more rapidly than the needs of the economy for these positions.

A further criticism of community colleges by Clark (1960) is, what he terms the "cooling out" function. He observes that lower class students are channeled into the community college where their aspirations for further education are, quite literally, cooled off. Clark has found that the community college has a "negative impact on persistence." Karabel observes that the most likely "entrant to a two-year colleges is the person of high academic ability and low social status followed by the high status student of less than average ability" (1972, p. 529). Clark (1960) divides these students into three types: "pure terminal", "pure transfer", and "latent terminal". The first two groups enter the community college with a destination in mind (pure terminal = vocation; pure transfer = college or university), but it is the third group, latent terminal, who are cooled off by the community college. For these students the community college serves as a holding station until their aspirations are cooled off. Karabel does not see this cooling out function as anyone's fault, but "rather [it] grew out of the conflict between cultural aspirations and economic reality" (p. 539).

Such critics of the community college see it as perpetuating class distinctions, while offering no real opportunity for social mobility. Karabel views the existence of the community college "in part to reconcile students' culturally induced hopes for mobility with their eventual destinations..." (p. 546). It serves to maintain the distance between the latent terminal,

working class students at the community colleges and the privileged elite at universities. The "critical" question for Karabel is not "who gains access to higher education, but rather what happens to people once they get there" (p. 530). And, certainly: Where do people go once they leave? The avenues open to community college graduates are primarily to mid-level, semi-professional positions.

In its gate-keeping function the community college provides education for students who transfer to a four-year college or university. As a transferring institution it facilitates access to further education and offers the opportunity of social mobility for some students. An interesting phenomenon of recent years, however, has been the "reverse" transfer. Because tuition is less or prerequisites for further university coursework are needed, students who have been enrolled in a four-year college or university may return to the community college to take additional courses. Some students with Bachelor's degrees will attend the community college for additional, undergraduate coursework or, in some cases, enroll in a vocational program that can more readily assure them of a job.

Although some vocational programs (e.g., nursing) place community college students in professional positions, there are limitations in the value of the two-year or Associate of Arts degree. For example, nurses with an Associate degree are able to perform most of the duties of a nurse with a four-year degree, but they are not allowed to assume supervisory responsibility in many states. Likewise, dental technicians with two-year degrees are able to perform many supporting functions (e.g., routine cleaning), yet they are limited in the full range of duties they can perform. While these technical positions provide an important social function, it is important to understand if these students enrolled in mid-level vocational programs by choice or by default. Bright, lower-class students who are denied access to pre-medical or pre-dental programs at the universities may be channeled into mid-level vocational programs at the community college level. Similarly, place-bound students may have no other alternative than to lower aspirations and settle for a mid-level vocation. In this manner we see community colleges providing opportunities, on one hand, for students who would not otherwise have access to higher education. But, on the other hand, the community college can lower aspirations of bright, lower-class students by having them accept placement into a mid-level vocational program.

In his study of community colleges, Grubb (1984, p. 433) warns of the current "infatuation with education for high-tech occupations." He wonders whether this infatuation is "reasonable and justified" based on the predicted, slow growth rate of mid-level technical positions. Grubb observes that the real growth in the US economy will be in the no-tech, service-worker positions, such as janitors, cashiers, food service workers, etc. Because of slower growth in the mid-level positions, Grubb fears

American community colleges are in the midst of a "bandwagon effect" (p. 439) and that the colleges are in danger of "training for unemployment." Unfortunately, as Grubb observes, because students are in search of jobs, businesses are searching for trained workers, and educators are looking for students, "the vocational imperative is hard to resist" (p. 450).

Finally, with increasing costs of attending community colleges (books, tuition, day-care, transportation) and the opportunity costs of being out of the labor market for students, Grubb notes that the community colleges are in danger of becoming "middle class institutions" (p. 448). A walk through the parking lot of a major, urban community college offers an interesting mix of expensive European automobiles and beat-up American pick-ups and hot rods. Certainly, further research needs to be accomplished to understand better what students are enrolled in vocational programs and whether their enrollment is a limitation or a benefit. That some community colleges may be turning into middle class institutions is not necessarily an economic disadvantage for the college, but it may exclude the opportunities for lower-class students to gain access to higher education.

Comparing Brazil and the United States

In Brazil no directly comparable institution to the American community college exists. SENAI, as discussed, offers educational opportunities to a unique and small segment of the working class and is not a postsecondary institution in the same manner as the community college. Some educational innovations at the postsecondary level have been attempted but with limited success. For example, several engineering schools in Brazil started offering an alternative two-year program (Castro, 1983). After completing the first two years, however, all students chose to continue the full four years. Because of lower status of a two-year diploma, all students selected the four year degree. This experiment was quite limited because it did not open the engineering schools to a new, lower, class of students. Community colleges in the US have been successful in attracting lower class students because they have provided educational opportunities at the postsecondary level for an expanded class of students. The two-year program in Brazil was primarily unsuccessful because it was perceived as a diluted degree.

Other innovative educational opportunities are being attempted in Brazil to reach a new or different group of people in the middle class. At the State University of Rio (UERJ) night classes are being offered in an attempt to open the university to a new constituency. These evening students often work and are older than the traditional day students. Specific economic data on these students is not available, but in personal discussions with the Academic Vice President he explained that the evening students are primarily middle class. Most of these students were unable to complete an advanced degree because of lack of money or

time. While there is great interest at UERJ in instituting an "open university," the school is not yet prepared to deal with the remediation needs of students who lack basic academic skills and access is, therefore, limited. The issue of remediation at American postsecondary institutions (at both the university and community college level) is of critical concern to most campuses. Even, advantaged students with, supposedly, superior academic skills are often in need of some sort of remediation. This is evidenced by the proliferation of study skills centers and the listing of "bone-head" English and mathematics courses on many college campuses.

Implications

As Goodenow (1984, p. 52) asks: "What in sum can this teach us about our own legacy and responsibility?" It is quite patronizing to believe that the flow of knowledge is always from the developed nations to the developing ones. From Brazil we have the lesson of SENAI to consider. In his assessment Castro (1979) found that SENAI offered the working-class children an opportunity to reach their true potential. Regardless of the "narrowness" of this solution, SENAI offers a potential similar to that of the American community college. How this potential can be realized is a task for Brazilian educators and politicians. Both SENAI and the community college offer unique education to the lower middle levels of their respective societies, yet neither effectively offers education for those at the very bottom of the social structure. SENAI does provide, however, an innovative educational system that can assist both countries in determining how better to provide educational opportunities for the lowest social class.

In addition to who is served, when technical or vocational training is offered to students is a topic of concern. According to Castro (1986b) the timing is effected by the "intrinsic nature of the subject" and the "schooling level of the population." Castro warns that should the vocational content be offered prematurely it can alienate those students who are receiving greater benefit from a general, more academic education. Of course, if one waits too long to offer the vocational content, students who are still in school may no longer be interested. Because relatively few students, overall, ever attain eight years of schooling in Brazil, "very few students are ever offered any vocational training" (Castro, 1979, p. 624). If the school waits too long to present the vocational content there are few students left in school to meet the mid-level production needs of the economy. Likewise, in the United States, with the high school dropout rate approaching 26%, many students never have the opportunity to take vocational courses. These dropouts are among the least prepared to enter the labor market and are a liability to themselves as well as society. Even though the community colleges appear to cool off the aspirations of certain groups of students, there is a large number of dropouts who never attain a high enough level of education to be cooled off--they are simply

discarded from the system. Again, SENAI offers an interesting alternative for a lower level strata of the educational system.

Finally, even when timing, student, and educational content coincide appropriately, the vocational outcome may still be in question. Grubb has warned of the dangers when educational output exceeds the demands of the economy. This imbalance in output occurs not just at the lower vocational level, but also at the top of the professional pyramid. As educational output exceeds the ability of the economy to absorb graduates, the "occupational currency" of a person's education declines, which then engenders demand for further education (Foster, 1977, p. 225). Not just a problem endemic to developing nations, the decline in occupational currency is noted in the United States as well, with reports of PhD's driving taxi cabs.

With the focus here on the lower middle class, the occupational currency of vocational programs is an important consideration. Sum (1984) distinguishes three views on vocational education in the US: those in favor of eliminating vocational education as a separate curriculum, those interested in keeping vocational education as it is, and those wanting to expand programs. The group opposed to vocational education is strengthened by John Dewey's view that "vocational training, training for particular jobs, is not the education of free men and women" (Sum, p. 113). This group is also supported by research on vocational education, which is inconclusive. According to Sum (p. 127), no empirical case can be made for radically shifting the nature of existing coursework toward either the academic or the vocational area. Sum (p. 133) reports also that a number of studies have shown "that many employers in career labor markets, particularly in unionized establishments, are reluctant to hire young, recent high school graduates, particularly from vocational education programs."

In Brazil, Castro (1979, p. 618) has found great benefits from SENAI's vocational programs and he observes that SENAI has been "one of the most successful experiments in the history of Brazilian education." His "careful micro-economic analysis of the training of industrial workers revealed outstanding results for vocational education, as compared with academic education plus on-the-job-training" (p. 622). In fact, because SENAI works so closely with industry, graduates move directly into jobs. Castro found additionally that contrary to what might be thought about the dangers of overspecialization in training, SENAI produces workers who are "capable of performing functions quite far removed from the ones for which they were trained" (p. 627). A finding Castro notes that "challenges the myth that specialisation at this level heightens the inflexibility of the labour force" (p. 628).

Because the American community college has both transfer and vocational students it educates a broader range of students than SENAI. Nevertheless, the United States has much to learn from

the success of SENAI. Because SENAI students are the elite of blue collar workers and because they have overcome the odds of ever completing four years of schooling, we may find many of their skills to be equal to or superior to those of the working class, community college students enrolled in vocational programs in the US. How the students of each vocational system compare cross culturally in academic and vocational skills is an area of needed research. The comparability of programs such as the Jobs, Training and Placement Act (JTPA) in the US with SENAI would offer a better understanding of the benefits of sharing each system with the other country.

The training aspects of SENAI appear to be quite functional in Brazilian society. What remains to be discovered is the effectiveness of transferring a SENAI-type vocational education to the United States. Similarly, some training aspects of the community college are generally quite functional in American society, and the effectiveness of transferring an American community college system to Brazil should be considered.

While SENAI would appear to fill some of the gaps in the American educational structure, and the community college to fill gaps in Brazilian education, both systems do not serve well the potential students at the lowest social strata. We must look elsewhere, to identify alternatives for meeting the educational needs of the lowest social classes in both countries.

Conclusion

This discussion of SENAI and the US community college has addressed the first two of the three major questions posed in this paper: How is mid-level knowledge dispensed and who has access? and How does this education compare to that of the US education at the community college? The third question concerning the perpetuation of social stratification is not so clearly answered.

As discussed above, a number of American scholars are quite critical of the manner in which American community colleges channel students and cool off their aspirations. Similar criticisms can be raised over SENAI's stratification function, but community colleges and SENAI are not directly comparable with regard to the channeling of students. SENAI provides an opportunity for elite blue collar youths who would not otherwise have access to advanced education. SENAI youths are part of a culture that has few pathways up. This makes SENAI inherently no more equitable than American community colleges, yet it does offer advanced education for a small group of elite youths who would otherwise have none. Hansen (1977, p. 39) argues that "formal education is becoming a channel of social mobility for the lower and middle classes" in Brazil. Formal education appears to provide the only channel other than birthright for the lower social classes.

As a less developed nation than the US, the stratification in Brazil's educational system with regard to SENAI appears to be at a different developmental level than the "cooling out" function at community colleges. Perhaps "cooling out" is the next developmental step in an educational system that fosters stratification. As more working, lower-middle, and middle class students gain access to education in Brazil the lesson of stratification at American community colleges should be heeded. Because, as Carnoy (1982) notes, access to knowledge is crucial to the struggle of the emerging middle class in developing nations, we must ask: How can access be initiated and cooling out avoided as Brazil's educational system develops? A similar question for the American educational system is: How can access be improved and stratification minimized to create a more equitable system? Rather than capping aspirations how can better bridges to higher levels of education be provided for lower class and middle class students? Although the US is more technologically advanced than Brazil, it appears to be but a stage above Brazil in the equity of its educational development. Both nations must devise new ways to provide access to mid-level and high status knowledge for the lowest social classes. Both nations can learn from each other's systems as they face new levels in their educational development.

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